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TO: Commissioner for Patents
Attn: Examiner Sunray Chang
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FROM: George H. Gates
OUR REF.: G&C 30566.123-US-01
TELEPHONE: (310) 642-4146

Total pages, including cover letter: 7

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Title of Document Transmitted:	TRANSMITTAL SHEETS AND REPLY BRIEF OF APPELLANTS.
Applicant:	Peter Hummel et al.
Serial No.:	09/651,031
Filed:	August 30, 2000
Group Art Unit:	2121
Title:	DEFINING PARAMETERS FOR A FINITE ELEMENTS ANALYSIS CALCULATION IN A COMPUTER-ASSISTED DRAFTING PROGRAM
Our Ref. No.:	G&C 30566.123-US-01

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By: 

Name: George H. Gates
Reg. No.: 33,500

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Date

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G&C 30566.123-US-01

Due Date: October 24, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Peter Hummel et al. Examiner: Sunray Chang
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CERTIFICATE OF MAILING OR TRANSMISSION UNDER 37 CFR 1.8

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By: 

Name: George H. Gates

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

We are transmitting herewith the attached:

- ☒ Transmittal sheet, in duplicate, containing a Certificate of Mailing or Transmission under 37 CFR 1.8.
☒ Reply Brief of Appellant(s).

Please consider this a **PETITION FOR EXTENSION OF TIME** for a sufficient number of months to enter these papers, if appropriate.

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Customer Number 22462**GATES & COOPER LLP**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of:)	
)	
Inventor: Peter Hummel et al.)	Examiner: Sunray Chang
)	
Serial #: 09/651,031)	Group Art Unit: 2121
)	
Filed: August 30, 2000)	Appeal No.: _____
)	
Title: DEFINING PARAMETERS FOR A)	
FINITE ELEMENTS ANALYSIS)	
CALCULATION IN A COMPUTER-)	
ASSISTED DRAFTING PROGRAM)	

REPLY BRIEF OF APPELLANTS

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR §41.41, Appellants' attorney hereby submits the Reply Brief of Appellants in response to the Examiner's Answer dated August 24, 2005 received in the above-identified application.

No fee is required for filing this Reply Brief. However, the Office is authorized to charge any necessary fees or credit any overpayments to Deposit Account No. 50-0494 of Gates & Cooper LLP.

I. ARGUMENTS

In the Answer, the Examiner essentially reiterates the prior rejections.

In this regard, this Reply Brief of Appellants incorporates by reference herein the entirety of the previously filed Brief of the Appellants. Moreover, additional arguments are also presented below.

As noted previously, Appellants' independent claims 1, 16, and 20 are generally directed

to an invention that defines at least one parameter for a finite elements analysis (FEA) calculation in a computer-assisted drafting (CAD) program. Independent claim 1 is representative and recites:

1. A method for defining at least one parameter for a finite elements analysis (FEA) calculation in a computer-assisted drafting (CAD) program, said method comprising:
 - a) determining a body for which said parameter is to be defined, said body being an entity processed by said CAD program; and
 - b) using at least one graphical function of said CAD program to define a region within a face of said body, said region being used to define a load/support condition for said FEA calculation.

The Examiner asserts that the independent claims are anticipated by St. Ville (U.S. Patent 5,594,651), which discloses a method for manufacturing an object wherein CAD techniques are used and a FEA stress analysis is performed. Specifically, on page 11, lines 6 - 10 of the Answer, the Examiner asserts as follows:

... Ville discloses "one graphical function (graphics software program, Col 13, Line 56) of CAD program (computer-aided design, Col 13, Line 55 and Col. 1, Line 49) to define a region (region A - F, Fig. 5A) within a face of body (Fig. 5A), region being used to define a load/support condition for FEA calculation (Identify forces applied to object intended application, Fig. 1, Sheet 1/11, Fig. 2).

Appellants' attorney disagrees.

Appellants' attorney submits that St. Ville does not disclose the limitations of using a graphical function of the CAD program to define a region within a face of the body, wherein the region is used to define a load/support condition for a FEA calculation.

Instead, the cited portions of St. Ville only describe the following:

- Col. 13, Lines 55-56 of St. Ville merely states that a CAD module 801 is a three-dimensional graphics software program for generating a geometrical model definition.
- Col. 1, Lines 46-49 of St. Ville merely states that the initial design geometry of the object and the materials of which the object is to be composed are defined at step 11 of Fig. 1, that the geometry includes dimensions, tolerances, surface finish, definitions of surfaces and edges, and, in some cases, the fit between two

mating parts, that the initial design geometry may be created using CAD techniques known in the art, and that each force which will be applied to the object during intended use, and the points and direction of application of the respective forces, are identified at step 12 of Fig. 1.

- Fig. 5A merely illustrates an in vivo hip applied with a force of 2000N and Fig. 5B is a table setting forth measures of the displacements generated at the points A-F in Fig. 5A in response to the applied force.
- Fig. 1 merely illustrates a prior art methodology for manufacturing an object and Fig. 2 merely illustrates a simple mechanical spring system for defining terminology used in the application.

There is no teaching or suggestion in any of these portions of St. Ville that a graphical function of a CAD program can be used to define a region within a face of a body, wherein the region is used to define a load/support condition for a FEA calculation.

For example, Fig. 5A of St. Ville is an in vivo hip, not a CAD representation of a hip. Moreover, the labels A-F in Fig. 5A represent points on the in vivo hip where displacements are measured, not regions defined graphically within a face of a body in a CAD program.

In another example, Fig. 1 of St. Ville merely describes creating the initial design geometry of an object and the materials of which it is composed using CAD techniques at Step 11, and identifying each force which will be applied to the object during intended use, and the points and direction of application of the respective forces, at Step 12. However, Fig. 1 does not use a graphical function of the CAD program to define a region within a face of the body, wherein the region is used to define a load/support condition for a FEA calculation.

In addition, St. Ville states that different programs are employed for the CAD and FEA steps, respectively. See, e.g., Col. 9, Lines 1-59. While the FEA software uses the geometric model data generated by the CAD program, there is no indication that any graphical CAD function may be used to define a load/support condition for a FEA calculation.

Roth (U.S. Patent No. 5,289,567) and Itoh (U.S. Patent No. 5,774,124) fail to overcome the deficiencies of St. Ville. Recall that Roth and Itoh were only cited against the dependent claims, and only for the purposes of showing FEA calculations. However, there is no teaching or suggestion in either of these references of using a graphical function of the CAD program to

define a region within a face of the body, wherein the region is used to define a load/support condition for a FEA calculation.

Thus, Appellants' attorney submits that independent claims 1, 16, and 20 are allowable over St. Ville, Roth, and/or Itoh, taken individually or in combination. Further, dependent claims 2-15, 17-19, and 21-23 are submitted to be allowable over St. Ville, Roth, and Itoh in the same manner, because they are dependent on independent claims 1, 16, and 20, respectively, and thus contain all the limitations of the independent claims.

II. CONCLUSION

In light of the above arguments, Appellants' attorney respectfully submits that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103.

As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

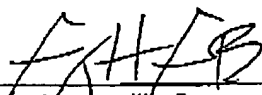
Peter Hummel et al.

By their attorneys,

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